

**We Claim:**

1. A system for detecting the status of a vent associated with a fluid supply upstream of an infusion pump, comprising:

a pressure sensor located upstream of an infusion pump, the pressure sensor configured to provide pressure signals representative of the pressure within a fluid line;

a processor configured to monitor a parameter representative of a status of the infusion pump and to sample the pressure signals received from the pressure sensor as a function of the status of the infusion pump, and, if the sampled signals indicate a negative pressure in the fluid line, to provide an alert.

2. The system of claim 1 wherein the infusion pump is a peristaltic pump and the monitored parameter is a value of the number of pump cycles the peristaltic pump has completed.

3. The system of claim 2 wherein the processor samples the signals received from the pressure sensor when the value of the monitored parameter exceeds a predetermined number of pump cycles.

4. The system of claim 2 wherein the processor periodically samples the signals received from the pressure sensor after a predetermined number of pump cycles have occurred.

5. The system of claim 4 wherein the predetermined number of pump cycles is three.

6. The system of claim 1, wherein the negative pressure is indicative of a vent problem.

7. A method of determining the status of a vent in a fluid line located upstream of a peristaltic infusion pump, the peristaltic infusion pump configured to pump fluid in a cyclical manner, the method comprising:

determining a value representative of the number of cycles that have been completed by the infusion pump;

sampling signals provided by a pressure sensor configured to sense the pressure in a fluid line upstream of the infusion pump;

processing the signals to determine a value for the pressure in the upstream fluid line; and

providing an alert if the pressure value is negative.

8. The method of claim 7 wherein sampling occurs only when a predetermined number of pump cycles have been completed.

9. The method of claim 7 further comprising:  
storing the value for the pressure in a memory;  
sampling the signals after and predetermined number of cycles have been completed;  
determining a second value for the pressure in the upstream fluid line;  
comparing the second value for the pressure to the first value for the pressure; and  
providing an alert signal if the second value is more negative than the first value.

10. A system for detecting a change in pressure in an infusion line upstream of an infusion pump, comprising:

a pressure sensor located upstream of an infusion pump adjacent an upstream infusion line, the pressure sensor configured to provide pressure signals representative of the pressure within the upstream fluid line; and

a processor programmed to monitor a parameter representative of a status of an infusion of fluid into a patient, the processor also programmed to sample pressure signals received from the pressure sensor as a function of the status of the infusion, and to analyze the sampled signals to determine if the pressure in the upstream fluid line is decreasing.